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OCHTERIDAE FROM WESTERN AND
SOUTHERN AFRICA (Hemiptera: Heteroptera)

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ABSTRACT. This paper treats Ochteridae from western and southern Africa. Two new species of the genus *Ochterus* Latreille, 1807, are described: *Ochterus piliferus* Kormilev, new species, from Angola, and *O. minor* Kormilev, new species, from Angola, Congo, and Nigeria.

Members of the Ochteridae, a small family of semi-aquatic, predatory Hemiptera, live on the shores of streams, ponds, and lakes, and are not tied to any one microclimatic area. As a consequence, some of their species have enormous areas of distribution; for example, *Ochterus marginatus* (Latreille, 1804), is distributed across three zoogeographical regions: Palaearctic, Oriental, and Ethiopian. Generally very similar to each other, the species show rather great variation in size and color, so that it is necessary to dissect the insect to see the shape of the right paramere, a very good character for the separation of species. Another character which, it seems, helps to separate, if not species, then at least groups of species, is the pattern of striation on the frontal plate. This trait is fairly constant in some species.

In Africa south of the Sahara only one genus, *Ochterus*

Latreille, 1807, and three species have been recorded so far: *Ochterus marginatus* (Latreille, 1804), *O. caffer* (Stål, 1855) and *O. africanus* Jaczewski, 1938. The first species, *Ochterus marginatus* (Latreille), besides being recorded from Spain and Morocco to Japan, was recorded south of the Sahara from Ethiopia to Nigeria and Angola. The second species, *O. caffer* (Stål), first described from South Africa, later was recorded also from Kenya, Tanganyika, Nigeria, and even from Sierra Leone (Jaczewski, 1934, p. 607, and 1938, p. 187). The third species, *O. africanus* Jaczewski, was described on the basis of a single specimen, a female, from former French Congo (Jaczewski, 1938, p. 186), and since then has not been mentioned again.

Males of the Ochteridae have asymmetrical abdominal segments and asymmetrical parameres, the right paramere being much larger and more differentiated than the left one. By the shape of the right paramere, the ochterids may be separated into two large groups: to the first belong all Old World species of the genus *Ochterus*, which have the right paramere with two subapical appendices; to the second group belong all American species of the genus *Ochterus* as well as the species of the Australian genus *Megochterus* Jaczewski, 1934, all of which have the right paramere without appendices. A comparative study of the American and Old World species of the genus *Ochterus* is necessary before we can decide whether or not the American species should be separated as a different subgenus.

The African species of the genus *Ochterus* Latreille have two different types of right parameres. The species *Ochterus marginatus* (Latreille) and a new species, which I am naming *Ochterus minor*, have the stem of the right paramere cylindrical, and the species *Ochterus caffer* (Stål) and a new species, which I am naming *Ochterus piliferus*, have the stem of the right paramere expanded laterally into lamellated, transparent plates, flanking the darker core from both sides.

The frontal plates of African species are also of two different types: to the first type, which we may name '*marginatus*,' belong species which have the striation of the frontal plate much sharper, particularly on the upper half of the plate. To this type belong the species *Ochterus marginatus* (Latreille) and *Ochterus piliferus* Kormilev, new species. To the second type, which we may name '*caffer*,' belong species with much finer striation, particularly on the upper half of the frontal plate. To this type belong the species *Ochterus caffer* (Stål) and *Ochterus minor* Kormilev, new species.

Ochterus piliferus has a body covered with more or less erect stiff bristles, and the venter covered with dense, inclined, and long hairs, the first case of this character in the family Ochteridae to be noted.

It is interesting to mention that *Ochterus piliferus* has the right paramere of the type '*caffer*' and the frontal

plate of the type '*marginatus*.' *Ochterus minor* has them reversed, the paramere of the type '*marginatus*' and frontal plate of the type '*caffer*.'

Measurements were taken with a micromillimeter eyepiece, 25 units equal 1 mm. In ratios the first figure indicates the length and the second the width of measured portion. Length of head was taken perpendicular to the frontal plate, and the measurements of the abdomen on the ventral side, as the hemelytra cover the abdomen completely.

I want to express my sincere gratitude to Dr. Paul H. Arnaud, Jr., Curator and Chairman, Department of Entomology, California Academy of Sciences, San Francisco, for the privilege of studying this relatively small, but very interesting lot of Ochteridae housed in the collections under his care.

GENUS *OCHTERUS* Latreille

Ochterus Latreille, 1807, Gen. Crust. Ins., vol. 3, p. 142.
Pelogonus Latreille, 1809, Gen. Crust. Ins., vol. 4, p. 384.
 (The name change was unnecessary. Latreille thought that *Ochterus* was preoccupied by *Ochthera* Latreille, 1804, in Diptera.)

Type-species. *Acanthia marginata* Latreille, 1804.

Ochterus marginatus (Latreille, 1804).

- Acanthia marginata* Latreille, 1804, Hist. Nat. Crust. Ins., Paris, vol. 12, p. 242.
Ochterus marginatus Latreille, 1807, Gen. Crust. Ins., Paris, vol. 3, p. 143.
Pelogonus marginatus Latreille, 1809, Gen. Crust. Ins., Paris, vol. 4, p. 384.
Pelogonus indicus Guérin, 1843, Rev. Zool., Paris, vol. 6, p. 113.
Pelogonus armeniacus Kolenati, 1857, Bull. Soc. Nat., Moscou, vol. 29, p. 455 (1856).
Pelogonus flavomarginatus Scott, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 14, p. 446.
Pelogonus formosanus Matsumura, 1915, Ent. Mag. (Japanese), vol. 1, p. 103.
Ochterus marginatus Kiritshenko, 1918, Mem. Mus. Cauc., Tiflis, ser. A, vol. 6, p. 172.

Ochterus marginatus (Latreille, 1804), has a rather sharp striation on the frontal plate (fig. 1), and a right paramere with cylindrical stem (figs. 2 and 3). The parameres examined are slightly different from the parameres

described by Jaczewski (1934, p. 603) for specimens collected in Spain, Ethiopia, Ceylon, Vietnam, and Japan, or by me (1971, p. 434) for Philippine specimens, but the type is the same, the frontal plates being similar to those of specimens from the Palaearctic or Oriental regions, and the general aspect of the body is the same.

Differences in size are rather pronounced, males ranging from 4.08 to 5.68 mm., and females from 4.12 to 5.40 mm.

MATERIAL EXAMINED. CONGO, 3 ♂♂ & 1 ♀, 39 km. S. of Walikale, 700 m., 25 July 1957, E. S. Ross & R. E. Leech; 1 ♂, 47 mi. N. of Uvira, 900 m., 23 August 1957, E. S. Ross & R. E. Leech; 1 ♂, 19 km. W. of Kolwezi, 1370 m., 29 January 1958, E. S. Ross & R. E. Leech; ANGOLA 1 ♀, Vila Luso, Moxico, 25 September 1949, B. Malkin; CAMEROON, 1 ♂ & 1 ♀, Ya Daude, 23-27 July 1949, B. Malkin; NIGERIA, 2 ♀♀, Ogbomosho, Prov. Oyo, 13 July 1949, B. Malkin; 1 ♂ & 1 ♀, Kabba, 20 February 1949, B. Malkin; 1 ♂, Ilorin, Prov. Ilorin, 18 February 1949, B. Malkin.

Ochterus minor Kormilev, new species.

MALE. Elongate ovate, naked; pronotum, scutellum, and hemelytra finely punctured.

Head shorter than width across eyes (♂-25:33, ♀-26:32.5); frontal plate shiny and finely striate ('caffer' type), (fig. 4); anterior border of frontal plate not raised; posterointerior portions of eyes and occiput opaque. Relative length of antennal segments I to IV are: ♂-2:3:5:6, ♀-2:3:5:6. Labium reaching behind fore border of sternum IV (♂), or sternum III (♀). Pronotum shorter than its maximum width (♂-22:53, ♀-22:32.5); lateral expanded and lamellate borders slightly convex, rounded anteriorly; hind border trisinate; interlobal depression obsolete. Scutellum shorter than its basal width (♂-22:29, ♀-22:30); basal border convex, lateral borders straight, tip acute, disc convex. Hemelytra covering abdomen completely. Abdomen shorter than maximum width across sternum III (♂-40:50, ♀-40:53); ratio of medial length of sterna IV and V is 3:7 (♂), 3:6 (♀). Right paramere similar to that of *O. marginatus* (fig. 5).

Color. Black, opaque; frontal plate black, shiny; fore border of frontal plate, lamellated borders of pronotum, hind border of the same medially and laterally, basolateral borders and two round spots on exterior borders of corium, tip of clavus, exterior borders of pro-, meso-, and metapleurae, and acetabulae, are pale yellow to yellow brown; femora ochraceous with brown dots inferiorly, brown superiorly; tibiae and tarsi reddish brown; labium dark reddish brown to almost black. Pronotum and hemelytra with a few bluish spots easily rubbed off; base of clavus slate grey, opaque.

MEASUREMENTS. Total length: ♂-3.92, ♀-4.08 mm.; width of pronotum: ♂-2.12, ♀-2.10 mm.; width of abdomen: ♂-2.00, ♀-2.12 mm.; width across hemelytra: ♂-2.20, ♀-2.24 mm.

HOLOTYPE. ♂ (California Academy of Sciences), CONGO, Matadi, 22 July 1957, E. S. Ross & R. E. Leech.

ALLOTOPOTYPE. ♀ (California Academy of Sciences), collected with holotype.

PARATYPES. CONGO, 1 ♂ & 2 ♀♀, 12 mi. N. of Matadi, 28 July 1957, E. S. Ross & R. E. Leech; ANGOLA, 1 ♂ & 1 ♀, Huambo, Vila Flor, 25 September 1949, B. Malkin; 1 ♀, Malange, 11 September 1949, B. Malkin; NIGERIA, 2 ♀♀, Kabba, 20 February 1949, B. Malkin. (California Academy of Sciences and collection of the author).

Ochterus minor is related to *O. marginatus*, 1804, but is smaller, has a frontal plate with a very fine striation ('caffer' type) and its right paramere, though of 'marginatus' type, is slightly different.

Ochterus caffer (Stål), 1855.

Pelogonus caffer Stål, 1855, Oefv. K. Vet.-Akad. Förh., vol. 12, p. 46.

Pelogonus marginatus Stål, 1865, Hem. Afr., vol. 3, p. 170.

Ochterus marginatus caffer Jaczewski, 1934, Ann. Mag. Nat. Hist., ser. 10, vol. 13, p. 606.

Stål firstly described *Ochterus caffer* as a separate species, but 10 years later synonymized it with *O. marginatus* (Latreille). In his "Notes on the Old World Species of Ochteridae" (1934, p. 597), actually a revision of the Old World Ochteridae, Jaczewski separated it as a subspecies of *O. marginatus*, basing this conclusion on the different shape of the right paramere. I held it to be a different species, (1) because the right paramere is not only different from that of *O. marginatus*, but of a different type, with lamellated stem borders; (2) because it has a different type of striation on the frontal plate; and (3) because both species, *O. marginatus* and *O. caffer*, have overlapping areas of distribution.

Jaczewski has not redescribed *O. caffer*, limiting himself only to remarks about the shape of the right parameres, so I am giving a short redescription.

MALE. Elongate ovate, naked; pronotum, scutellum, and hemelytra finely punctured.

Head shorter than width across eyes (♂-30:42, ♀-28:41); frontal plate with much finer striation than in *O. marginatus* (fig. 6). Relative length of antennal segments I to IV are: ♂-2.5:4:6:7, ♀-2.5:3.5:5.5:5.5. Labium reaching behind fore border of sternum IV in both sexes. Pronotum shorter than its maximum width (♂-26:67.5, ♀-28:70); lateral lamellated borders slightly rounded, more so anteriorly; interlobal depression interrupted medially.

Scutellum shorter than its basal width (δ -30:42, η -30:42); lateral borders slightly convex; disc raised and flattened medially. *Abdomen* shorter than its maximum width across segment III (δ -59:63, η -57:67); sternum IV half as long medially as sternum V (δ -5:10, η -5:9). Right paramere with lamellated lateral expansions (figs. 7 and 8).

Color. Sepia brown; fore border of frontal plate, lamellate lateral borders of pronotum, posterior border of the same in the middle and laterally, and 4 lateral spots on each hemelytron, are yellow brown; pronotum on the fore lobe laterally, base of scutellum, and base of clavus, are slate grey and opaque; a few spots on pronotum laterally, basal angles of scutellum, a few spots on clavus apically, on corium and membrane, are bluish, easily rubbed off; pro-, meso-, and metasterna, and pleurae, are light grey and opaque; venter dark brown, almost black; labium dark red-brown to black and shiny.

MEASUREMENTS. Total length: δ -5.00, η -5.40 mm.; width of pronotum: δ -2.70, η -2.80 mm.; width of abdomen: δ -2.52, η -2.68 mm.; width across hemelytra: δ -2.70, η -2.80 mm.

MATERIAL EXAMINED. SOUTH AFRICA, 7 $\delta\delta$ & 2 $\eta\eta$, Cape Province, 2 mi. S. of Citrusdal, 150 m., 30 April 1958, E. S. Ross & R. E. Leech; DAHOMEI, 1 δ , Kandi, 27-28 November 1948, B. Malkin.

Ochterus piliferus Kormilev, new species.

MALE. Elongate ovate; occiput, posterointerior portions of eyes, pronotum, scutellum, and hemelytra, with exception of the membrane, are covered with stiff, erect, dispersed bristles; venter densely covered with long inclined hairs; sterna and legs also with long hairs (fig. 9).

Head shorter than width across eyes (32:41); frontal plate with a pattern of rather sharp striation of the '*marginatus*' type (fig. 10). Relative length of antennal segments I to IV are: 3:5:6:8. Labium reaching beyond fore border of sternum V. *Pronotum* less than half as long as its maximum width (28:67); lateral borders lamellated, straight, rounded, and converging anteriorly; fore lobe with 2 (1+1) weak, transversely ovate elevations, hind lobe finely punctured. *Scutellum* shorter than its basal width (25:37); disc slightly convex and punctured, lateral borders straight, tip acute. *Hemelytra* covering abdomen completely; clavus and corium punctured. *Abdomen* shorter than its maximum width across segment III (60:67); sternum IV half as long medially as sternum V (5:10); right paramere with lamellated lateral expansions of '*caffer*' type (fig. 11).

Color. Frontal plate black and shiny with orange-yellow stripe along anterior border; posterointerior portions of eyes, occiput, pronotum, scutellum, and hemelytra, are black; eyes brown; lamellated lateral borders of pronotum, basolateral borders of hemelytra, and

acetabulae, are orange-yellow; labium reddish brown to black, shiny; legs yellow-brown.

MEASUREMENTS. Total length: 5.12 mm.; width of pronotum 2.68 mm.; width of abdomen 2.68 mm.; width across hemelytra 2.92 mm.

HOLOTYPE. ♂ (California Academy of Sciences), ANGOLA, Vila Luso, Moxico, 25 September 1949, B. Malkin.

Ochterus piliferus is related to *O. caffer* (Stål, 1855), but may be separated from it at once by the stiff erect bristles which cover the body.

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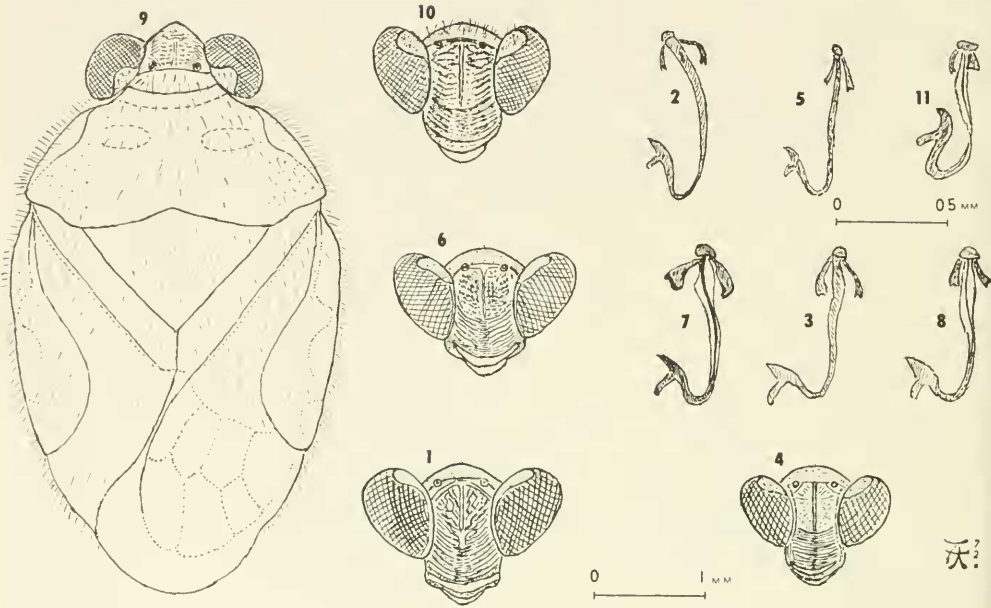
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FIGURES 1 to 11. FIGURES 1-3. *Ochterus marginatus* (Latreille), ♂. FIGURE 1. Frontal plate of specimen from Congo. FIGURE 2. Right paramere of specimen from Congo. FIGURE 3. Right paramere of specimen from Nigeria. FIGURES 4-5. *Ochterus minor* Kormilev, new species, ♂. FIGURE 4. Frontal plate of specimen from Congo. FIGURE 5. Right paramere of specimen from Congo. FIGURES 6-8. *Ochterus caffer* (Stål), ♂. FIGURE 6. Frontal plate of specimen from South Africa. FIGURE 7. Right paramere of specimen from South Africa. FIGURE 8. Right paramere of specimen from Dahomei. FIGURES 9-11. *Ochterus piliferus* Kormilev, new species, ♂. FIGURE 9. Dorsal aspect (legs are omitted). FIGURE 10. Frontal plate. FIGURE 11. Right paramere of the holotype from Angola.

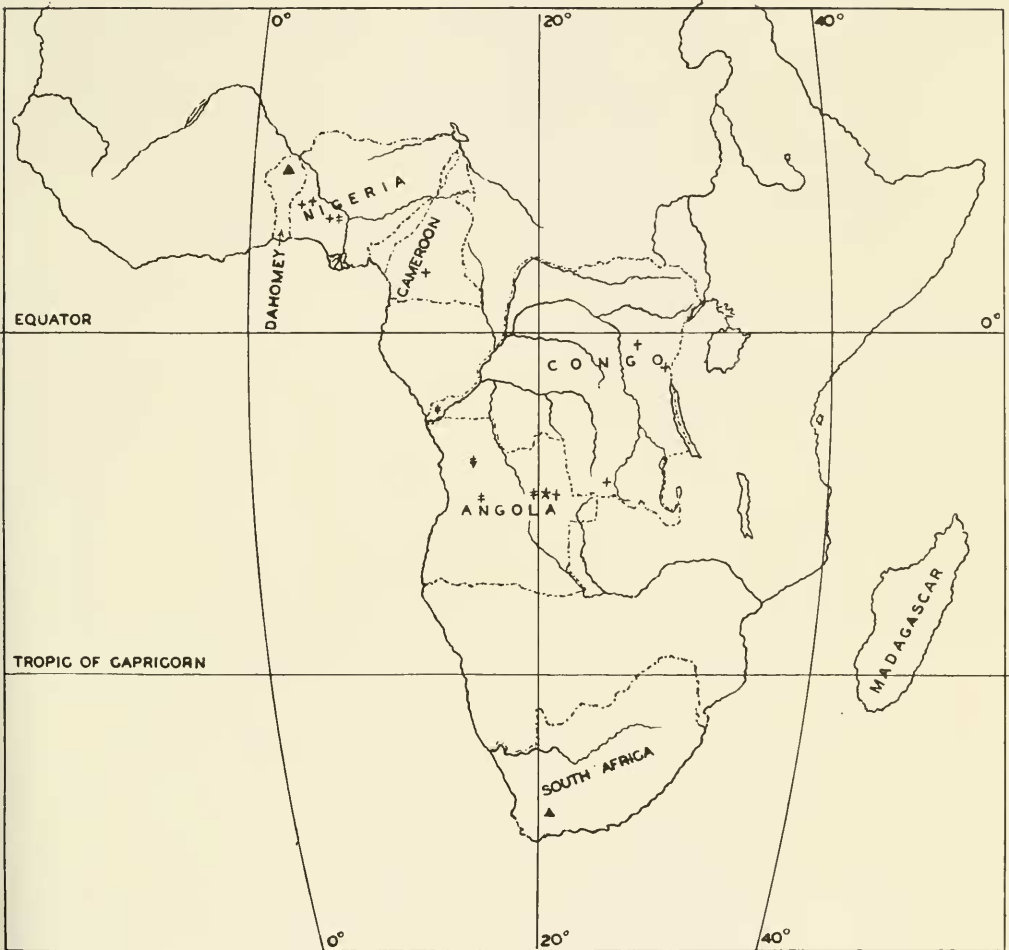


FIGURE 12. Map of Africa south of the Sahara showing approximate collection localities for *Ochterus marginatus* (Latreille) (+), *O. caffer* (Stål) (▲), *O. piliferus* Kormilev, new species (*), and *O. minor* Kormilev, new species (‡).